

## 1.1 Radio Astronomy

### 1.1.1 Maintenance and Calibration

- Continued the development and testing of several TDN connection blocks to support VLBI observations (DSS65 SDA DOY 264 60 min, DSS65 MAINTENANCE DOY 272, DSS65 SDA DOY 273 180 min).
- Measured DSS54 Q-band gain curve (DSS54 downtime period DOY 258).
- Performed DSS63 K-band pointing run using ACME (DSS63 SDA DOY 261 300 min). Bad weather affected measurements, not enough good points were collected to derive a new pointing model. More data to be collected.
- Performed conditioning of several Mark5 modules. Received modules from JIVE correlator to support October observing session.

### 1.1.2 R&D and Outreach activities

Installed NRAO “sched” program at RAC60B workstation. It will be used to plan and generate observing files for K-band Multi-frequency Synthesis VLBI observations in the DSN.

A DSN event to celebrate the IYA-09 is being organized with the participation of GAVRT, PARTNeR and the RA Departments from CDSCC and MDSCC. It has been proposed a continuous 24 hour observation of Jupiter utilizing DSN tracking facilities around-the-world (DSS-43, DSS-63, DSS-13 –GAVRT- and DSS-61 –PARTNeR-). The tentative name for the event is “**Jupiter: Project 24**” (see logo below). First simultaneous observing test with DSS43 and DSS63 will be performed on DOY 277.



### 1.1.3 Observations

#### 1.1.3.1 Interferometry

MDSCC participated in 2 Very Long Baseline Interferometric (VLBI) observations (320 min in total):

- RFC Clock Synchronization on DSS-65 (2 observations; 320 min): 100% data degraded due to subreflector status orange (not able to properly position it for best focus at 45deg elevation; refer to DR#M105475); 100% data collected, performance of the system nominal for the second one.